“Impact Of Irrigation On Economic Development- A Study Of Parner Tahsil Ahmednagar District, Maharashtra”

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Introduction :

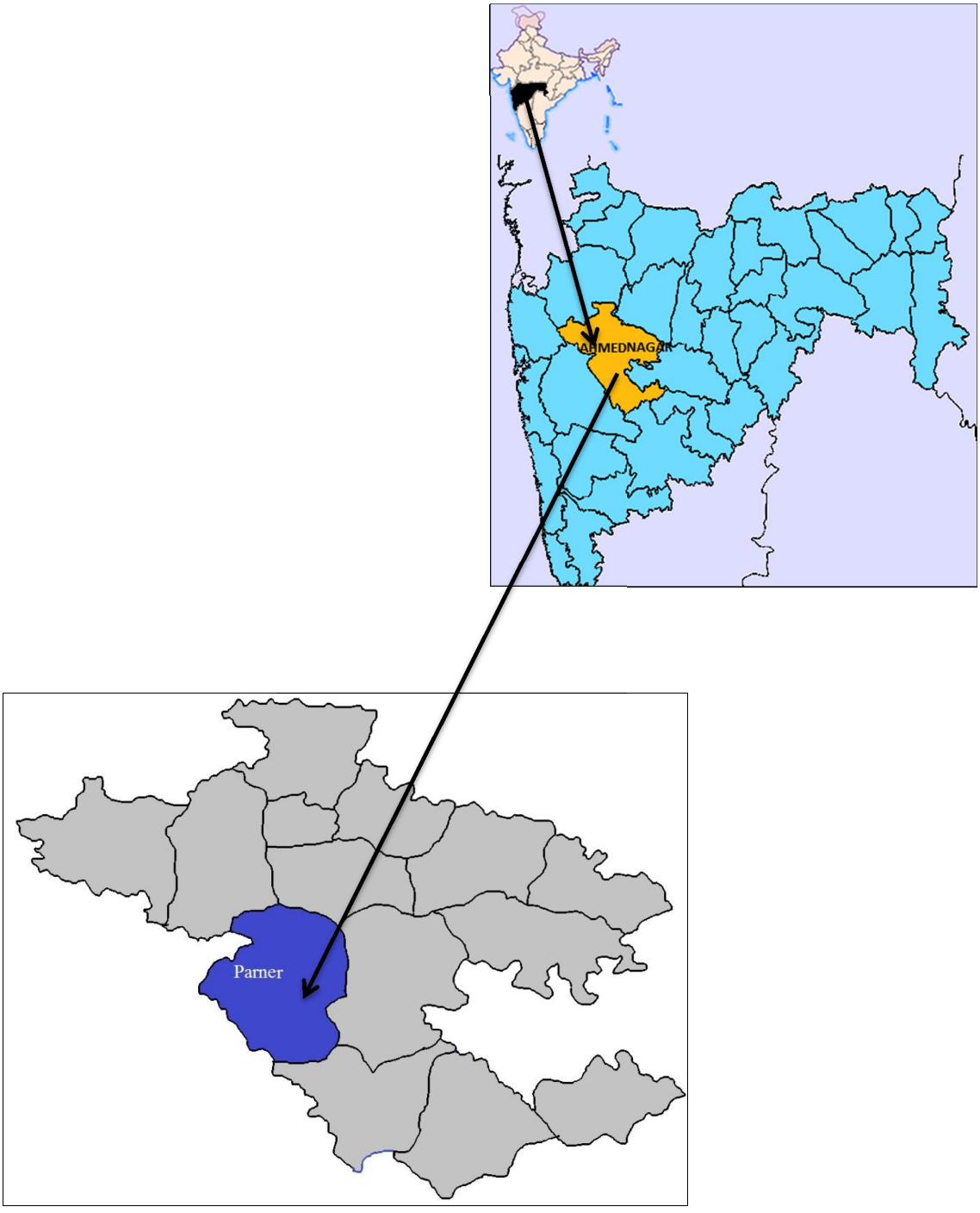
In India with more than 75% of the total population is in rural areas. It is imperative to develop the villages. Agricultural activity is not only a means of earning livelihood about a way of life in the Indian context. In India, agricultural sector is predominant. So obviously agricultural planning will be the core of the overall planning. The basic production unit is the individual's farm. Marion Clawson remarks that the "Considerations of physical feasibility, economic efficiency and cultural acceptability set major limits for truly comprehensive national planning for agriculture for the development of agriculture, the availability of water dependable and in sufficient quantity is a precondition. Rural development and prosperity through irrigation has been the dominant theme is in Indian planning through five year plans. All too often irrigation studies in India are confined to relatively narrow issues in production economics. It is obvious that, viewed as an input in rural development not merely agricultural production irrigation has other points of contact with development, economics as the irrigation in Indian rural economy begins to move from the wings towards the centre of the stage, Wide distribution of irrigation 2 water implies a strategy of dispersing the development thrust of irrigation it has other points of contact with development economics as the irrigation in Indian rural economy begins to move from the wings towards the center of the stage. Wide distribution of irrigation water implies a strategy of dispersing the development thrust of irrigation it has to treat irrigation as only a component in a broader design for agricultural and rural development. Irrigation often lands to increase urban market contacts on the part of the farmers with so many objectives of linking with development. Agricultural development does not start in vacuum. This is already in operation through ages but in traditional ways. It should have a five lift and transformation. With the progress of time the accent on the country's agricultural development has changed from problem of food scarcity to equity in distribution of benefits accruing to individual farmers. As agricultural contribution to the national income is around 42 % developing agriculture will lead to higher per capita income. For this study parner Tahsil is taken up, for i)

irrigation has improved much, over the past three decades ii) the agricultural development through Command Area Development Authority, through 9 there are five such CADAs in the Tehsil, remained a bunch of un-coordinate schemes not bringing the expected results, iii) frequent droughts floods marred the little progress achieved if any and iv) the familiarity of the researcher with the Tahsil and the region. total geographical areas1930 km^2 In parner , net area sown is 76.55% of the total geographical areas. Out of his 27.72% is the net area irrigated (2009-10). In different Tahsil in the district, the area brought under irrigation varies. Area irrigated by canals is 15956 hectares of the total area irrigated. For the year 2009-10, at current prices the contribution of agriculture to the Tehsil income is 46.35% and that of the primary sector is 49.12% (Maharashtra at a glance, Bureau of Economics and Statistics. 2000-10). Such is the importance and magnitude of the agriculture sector in parner Tahsil. Hence, the starting point for development would be no other than agriculture itself. Parner is a Tehsil / Block (CD) in the Ahmadnagar District of Maharashtra. According to Census 2011 information the sub-district code of Parner block is 04211. Parner has a population of 2,74,167 peoples. There are 56,476 houses in the sub-district. There are about 131 villages in Parner block.

Statement Of The Research Problem :

The Parner tahasil is drought prone area in Ahmednagar district permanent water sources are not available in this tehsil .the farmer entirely depend upon agriculture income have to face several problems .The soil held becoming poor day by day because of overuse chemical fertilizer and pestiside.todays due to irrigation system changeable is benefiter of the irrigated area.

Selection Of Study Area :



Area And Research Topic:

Parner Tahsil has been selected for the study to present research work .it is one of the fourteen tehsil ahmednagar district map show that etract location of the

parner tehsil within Maharashtra state as well as Ahmednagar district climatologically parner tehsil lies rain shadow or rain fed zone of Maharashtra state Temperature found that ranges between 16-35C and annual rainfall 695 mm geographically it located on Deccan plateau .the tehsil is confined by 180 49;40”N to 190 21;13” N LATITUDES AND 740 10;22” E 740 38 34” forms to the west part of Ahmednagar District Selection of Study area and Topic: As per the Revised Drought Prone Reclamation Committee in 1987 Districts and their Tahsils in Maharashtra are under drought prone area. Ahmednagar District is one of them and parner is known as drought prone Tahsil also. The soil in parner Tahsil is fertile. Its climate is also favorable for agriculture. However this area has not economically developed due to an irregularity in water supply for agriculture. Most of the people in parner Tahsil have been migrated for bread and buffer in other developed cities like Pune and Mumbai. The rest of the people are farming with Bore Wells and Wells. Uncertain monsoon is the curse for farming in such area. The annual average rainfall in parner is about 695mm. Out of them 77% of rainfall during the rainy season (June to September). It a effects on such crops in Tahsil regions. Once in a year there is only one crop that takes place. As a result the economical condition so not so good. Most of the amounts that they get through farming spend on family expenditure. They are unable to invest capital for farming. Kukadi canal is built by British in 1914 to 1927 and tikhol dam,hanga dam,palashi dam,mandohal dam,ruichatrapati dam,lonimaval dam,dhoki dam,on the river Hanga etc.

Importance And Need Of Study :

Irrigation is defined as “Artificially supplying & systematically dividing of water for agriculture production Water is Successful farmers have used different methods to apply water to their crops. This artificial addition of water is called irrigation. Irrigation is essentially the artificial application of water to overcome deficiencies in rainfall for growing crops. Irrigation is a basic determinant of agriculture because its inadequacies are the most powerful constraints on the increase of agricultural production. In traditional agriculture, irrigation was recognized for its protective role of insurance against the vagaries of rainfall & drought. But now,

adoption of high yielding varieties, chemical fertilization & multiple cropping highly used controlled irrigation for increasing productivity.

Research Metrhodology:

The study is resorted on both primary and secondary sources

A)Primary Data : Primary Data is collected through Questionnaire and interview schedule by the farmer.

B)Secondary Data : Secondary data collected from various annual report and office record of virous agency.as well as government publication, books,research paper,,article,news paper,websites and also unpublished research and related topic referred.

C)Data Analysis : For Analysis And Interpretation Of The Data The Researcher Has Used Ratio Percentage,Average,Annual Growth Rate,Standard Deviation And Standard Error With Help Of SPPS Software.The Graph And Diagram Are Also Used For Simplification Of Data. The Conclusions Are Deawn On Basis Of Pramiry And Secondary Data.

D) Methods Of Data Collection: Questionnaire method is adopted by contacting each head of the sample household, besides the field observation and macro level (secondary) data collection. The data is collected for the single agricultural year; July 2008 June 2009. For cross checking the reliability of the data, the village level worker, agricultural assistants, engineers (PWD) and some elite leaders of the villages are interviewed individually. Their views opinions are also recorded, on cretin relevant and important issues, to serve as guidelines cross checks.

The strong point of the study is that the data has been collected by the researcher himself and subsequently the tabulate on and analysis is done by him. This approach, it is felt, enables the researcher to develop insight in the field situation which helped a lot to enrich the subject treatment in the analysis part,

E) Size And Type Of Samples Techniques:

The cultivators list has been prepared from the up-dated Khata book of all villages, available with the Talathi (Village accountant) revenue official at the village

level. The list, thus recorded is exhaustive and latest. Those farmers, who are having land in the sample villages but staying outside the village, are however not considered for this study. The Khata book thus recorded has been regrouped into four land holding size 299), to capture the conditions of farmers, belonging to various levels (small, medium, marginal, big, etc.)

Farmer Categories:

1. < 1.5 hectares – Small farmers
2. 1.6 to 3 hectares – Medium farmers
3. 3.1 to 7 hectares – Marginal farmers
4. > 7 hectares – Big farmers.

Hypothesis For The Present Study :

It is difficult to make categorical statements on the development which is a multi faceted phenomenon; caused in the command areas, due to irrigation, however voluminous may be the data. An evaluation assessment on the basis of some primary and secondary information available for a short, yet acceptable, period will indicate the positive changes in the direction, and degree and quality of changes is discernible. The hypothesis taken up in this study is whether irrigation improves the standard of living of the rural masses and in turn helps the rural development. This study has the main objective of studying the impact of irrigation on rural development, through the development of agriculture The assumed chain reaction is that irrigation leads to intensive cultivation which results in better crop pattern reflecting in higher productivity causing more employment resulting in more per capita income and more saving. The probable increase in expenditure is expected to raise the intake of quality food. Expenditure on non food items like education, health care would also go up. Thus the study aims at quantifying and linking up interwoven characteristics of development, with irrigation as the (center) starting point for around development of the study (rural) area.

Scope And Objectives:

The main objective is to present study in depth, how irrigation holds the key for agricultural development and consequently rural development. The approach is a two pronged one : (i) At micro level : the cultivator households are considered, (ii) Tahsil as a unit is taken up for macrolevel study of the overall development.

Specific Objectives and Problem:

The present study can be termed as a path breaking one, in the sense that, an attempt is made here to study, understand and assess at micro level (cultivators households) the impact of irrigation under a command area canal system, in parner tahsil, as against the macro background of state level. After critical examination of different issues involved, at micro and macro levels, the study has finally selected the following eleven specific objectives to be studied at micro level. To cross cheek and further corroborate the micro level findings, an unique attempt and novel approach is made to compare the two neighboring villages (with irrigation as the limiting factor) with respect to twenty variables between two points of time. This proceeding helped to arrive at definite conclusions as to whether irrigation has really effected or it is a fluke chance at the micro mechanism of the analysis which makes the conclusions tool proof and leaves no room for benefit of doubt. At the farmer's (households) levels the following topics would be studies in depth to know whether irrigation has brought any change in the:

1. Work participation of own family female labour.
2. Attendance of the school going children (4-15 years) either to school or for work.
3. Area under cash crops; sugarcane, oil seeds, cotton, lemon, graps.
4. Use of inputs viz, on time and in sufficient quantities, thus minimizing the wastage.
5. Optimum (own / hired) labour usage (habit)
6. Intake of quality foods (milk, meat, ghee, etc.)
7. Proportion of (per capita consumption unit) expenditure on non-food items in the total expenditure
8. Per capita income: overall and source wise.
9. Indebtedness and its impact on agricultural production.
10. Housing conditions and availability of amenities / facilities

11. Position of people with reference to poverty line.

At macro level, Parner tahsil would be compared (over time and extent of benefit derived) with the neighboring dry nagar tehsil The secondary information will be collected on important variables that can be quantified like changes in literacy, population, employment, land use, crop pattern, agricultural implements, social infrastructure, communication, connectivity etc. this will be supplemented by personal observation too.

SCOPE AND LIMITATIONS OF THE STUDY :

1. Study is not following up but cross sectional in nature, due to lack of manpower, time and money. Wherever possible some figures from the bench mark survey report are referred to.
2. Memory basis of the respondent: as the data for a full agricultural year is collected in one to two sittings, during 2010-11 to 2020-21 for the each agricultural year.
3. Generally the tendency is to overestimate the expenditure and underestimate the income and production.
4. Only one year reference period (through rainfall is normal and not a drought year) It is not safe to generalize from the results obtained and conclusions arrived at, on the basis of only one year‟s inquiry, though the year of inquiry coincided with adequate rainfall in selected villages. To the extent the differences in output between 22 villages, which might have been noticeable, in an otherwise drought year, is mitigated. There are dangers in generalization, dangers of extrapolation and its is sometimes forgotten that any number of traverses do not add up to triangulation- this warning is well kept in mind by the researcher.

   This is overcome to a great extent by cross checking the village level data and agriculture department employees, (checklist) and personal observation.

5. **STUDY REGION IRRIGATION SOURCES :**

Visapur Dam, God River, Kukadi Project,Thikhol dam,Hanga dam,Palashidam,Mandholdam, Ruichatrapati dam,Lonimaval dam,Dhokidam

This is overcome to a great extent by cross checking the village level data and agriculture department employees, (checklist) and personal observation.

REVIEW OF LITERATURE :

In the present study an attempt has been done for understanding the change which has occurred due to irrigation facilities in parner tehsil with geographical view by reading so many related literature of agricultural geography. In India, there are differences between land use and crop pattern. Many geographers, economists, agriculturists and planners studied differently about irrigation, crop pattern etc. and therefore this topic have multiple approaches. The impact of irrigation is studied by several social scientists in the past in different parts of India. The studies are of different parts of India. The studies are of different nature (cross sectional and longitudinal) and at different levels; at macro level or at micro level i.e. at village level. The ultimate aim is to bring out the impact of irrigation on various factors or aspects of development either at the household level or village level. The factors generally touched upon are farm economy, general economic conditions, employment etc. in come cases even the social factors are analysed .

Gadgil, D. R. (1948) studied the affect of irrigation on economic development and he focused on the direct and indirect advantages of Pravara and Godavari Canal Irrigation Plan and studied comparatively the irrigated and non-irrigated area. He concluded that when farmers in Godavari and Pravara Canal region, change their crop pattern then their per acre productivity and total income will increased. Besides by changing the production system and transport facility the agricultural production and commerce and trade increased. Consequently the road and rail transport, market facility becoming increase in Ahmednagar district. There is more need of agricultural labours in irrigated area and alternatively employment opportunities and employment rate become increased. This increase in income is helpful for increasing economic and social status of labours. In 1958, Planning and Development Corporation, government of India had decided to create one research group by presidency of D. R. Gadgil and studied some selected direct and indirect benefits.

Krishna Murthy (1956) has evaluated the influence of Mattur irrigation and hydro electric project on agriculture and agro- industries in Puttukotal tahsil of Tanjore district of Tamil Nadu State. The sample covered 15 villages; with a sample of (total)

597 household; some with land and others with no land under the project and another 54 households from the non-project area to serve as control. The topics covered are area under irrigation, net cultivated area, intensity of cropping, yield rates, food supply, agriculture employment, cultivation practices, land scale and indebtedness. In all these aspects, it has been observed that the project area has an edge over the non-project area in general and wet cultivators over dry cultivators in particular.

Singh and Singh (1962) Studied and compared he rate at which and the extent to which irrigation by Bakra Dam has contributed in ameliorating the economic and social conditions of inhabitants of this tract. They have selected 8 already irrigated villages, 15 villages irrigated only through Bakra and 7 dry villages. When the water is released first during 1952- 53 and again in 1961- 62 they have compared the status of these villages. They have observed that crop pattern, pattern of cultivation, crop intensity have changed in the villages under Bakra, with more secure agriculture condition and with more returns. The standard of living of farmers has gone up. Irrigation seems to have lowered the area 12 under traditional crop bajra and increased the area under more profitable crops like cotton, sugarcane, rice, vegetables and gram. So far as family budget is concerned, it is observed that the total average income per family per annum (source wise) has gone up in the villages under the dam. A shift in the standard of living, as reflected by food habits, has also been observed.

Hanumantha Rao (1965) Compared yields in Telangana between partially irrigated (86) and dry (121) farmers. Among partially irrigated farmers output shows, on an average, a greater degree of response to a given percentages increase in land output than to a similar increase in labour input. The converse of it holds true among dry farmers greater the intensity of utilization of land, larger the elasticity of output that could be expected with respect to this factor.

Divakar Jha"s (1967) study deals with the direct and indirect benefits of irrigation under the Tribeni canal in the Champaran district of Bihar (under the Gandak River). Study area is divided into two major parts (i) project area (P), (ii) control area (C), the farmer with 96 % irrigated area under canal as against 34% in the latter. But the percentage areas irrigated to the total cultivated area differed much 55% to 2 % (c). In each area, around 4,000 farmers are contacted. The direct benefits

studied and compared between (p) and (c) are (1) land ownership (2) land utilization and crop pattern, (3) rural credit borrowings (4) farm investment, (5) farm implements (6) farm assets, (7) livestock, (8) human labour, (9) farm input, (10) farm output, I/O ratio, (11) Value of land, where as indirect benefits studied are (1) with another neighboring area which has no irrigation and (2) with the same area, before the onset of irrigation, the differences (in the variables studied) can be safely attributed as due to irrigation. This fool proof method has been adopted in this present study. Thus parner tahsil is compared between 2001 and 2010.

RELEVANCE OF THE STUDY:

The overall development in the command area can be well brought out at micro level, by studying one fairly big and representative village as most of the characteristics the problems faced, the benefits enjoyed, soil type, crop pattern, Ecological sociological and economic conditions are unbiasedly represented by the sample villages. However generalization cannot be extended too far. It is also remembered that ten years time is not that big to manifest radical changes in the traditionally backward areas like the study region. An attempt is made to know the directions of change. The ideal way of studying and understanding the impact of irrigation on the all round development of the village would have been by comparing the pre- irrigation data for the same villages. But this is time consuming and can‟t be done single handedly. Hence the next best alternative is to compare two neighboring villages,

CHAPTER SCHEME :

1.Introduction :

General Introduction, Study area, Selection of Study area and Topic, Hypothesis for the Present Study, Scope and Objectives, Specific Objectives and Problem, Relevance of the Study,Limitation, Study Region- Canal irrigation sources, Methodology, Sample Village Selection, Methods of Data Collection, Size and type of Samples.

2.Review Of Literature :

Related Review Of Literature Has Taken For This Chapter

In the present study an attempt has been done for understanding the change which has occurred due to irrigation facilities in Parner Tahsil with geographical view by reading so many related literature of agricultural geography. In India, there are differences between land use and crop pattern. Many geographers, economists, agriculturists and planners studied differently about irrigation, crop pattern etc. and therefore this topic have multiple approaches. The impact of irrigation is studied by several social scientists in the past in different parts of India. The studies are of different parts of India. The studies are of different nature (cross sectional and longitudinal) and at different levels; at macro level or at micro level i.e. at village level. The ultimate aim is to bring out the impact of irrigation on various factors or aspects of development either at the household level or village level The factors generally touched upon are farm economy, general economic conditions, employment etc. in come cases even the social factors are analysed.

3.Physical And Cultural Setting :

Physical Setting : introduction, Location, Situation and Site, Climate, Rainfall, Temperature, Humidity, Cloudiness, Winds, Natural Drainage, River, Soils, Vegetation, Geology, Rocks, Ground Water, Sunshine, Weather,

Cultural Setting : Introduction, Population, Population Growth, Population Density, Sex Ratio, Literacy, Rural and urban Literacy, Irrigation, Surface and Ground Water, Land Use, Cropping Pattern, Workers, industries.

4.Analysis And Results :

Given Topic Collect To The Primary Data And Analysis And Result.

5.Statistical Treatment :

In the analysis of the costs, when one variable is studies, it is studied in isolation without taking into account the other variables effect on this variable. To get the combined effect of all the related variables as the ultimate result, the gross production multiple regression equation analysis has been in use (Earl O. Heady and John L. Dillon. 1961). This short of analysis answers some of the problem like (a) the contribution of each of the inputs to the total output and the extent, (b) the significant of otherwise contribution of each of the in puts to total production.

6.Macro Level Comparison :

To assess the importance of irrigation ,and another mostly dry are compared in the previous chapters. To testing the assumption that whatever is true at the household level, may be also true at macro level, at macro level study is imperative. The best alternative is to compare

7.CONCLUSION, PLANNING FOR FURTHER DEVELOPMENT AND SUGGESTIONS :

The Given Research Topic tehsil data of the Irrigation Sources data according to this data find out role of irrigation To The Increases And Further Economics Development. To The Various Techniques use of increase irrigation and problem in irrigation.

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